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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,992	09/25/2000	Takeshi Ikegami	IJK/117	2587

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EXAMINER

COLON, GERMAN

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 06/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/646,992

Applicant(s)

IKEGAMI ET AL.

Examiner

German Colon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

On the disclosure, page 14, line 7, there is a reference to "steps 15 and 16" in both Figs. 1 and 2. The numerals representing these steps are shown in Fig. 1 but not in Fig. 2 as stated in the specification. On the other hand, there are steps 25 and 26 shown in Fig. 2, but the description fails to mention them. Same situation is found on page 16, line 6.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The disclosure is objected to because of the following informalities:

4. On page 3, line 7, a reference to a “back side opening 73” in Fig. 8 is made. Through the disclosure, reference 73 points out to an electron beam, while in Fig. 8 the back side opening is identified with numeral 71.
5. There is a typo on page 4, line 5, as it mentions an “outer side of *he* Braun tube” instead of “*the* Braun tube”.
6. On page 13, line 17, page 21, line 1 and on page 22, line 4, a “shadow mask 1” is referred to. Nevertheless, on page 1, line 15 and in Fig. 6, the shadow mask is represented by numeral 61.
7. Reference to “electron beam 8” is found on page 12, line 16. Although an electron beam 9 is identified in the diagrams.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda (U.S. 5,856,725) in view of Simpson et al. (U.S. 5,730,887). Ueda discloses a shadow mask 18 for a Braun tube having a plurality of slots 26 having substantially a rectangular shape, where the slots include a slot having substantially a rectangular shape and formed at a portion near an axis

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of ordinate **V** passing a central portion of the shadow mask. The rectangular slot is composed of a back side opening **26S**, a front side opening **26L**, formed through an etching process (see Col. 1 line 62), and side wall sections inclining between the back side opening and the front side opening (see Fig. 3 and Fig. 5). Ueda also discloses a slot formed on an outer peripheral side, and composed of a back side opening **26S** and a front side opening **26L** having substantially a rectangular shape. Ueda fails to disclose the peripheral side slots to be curved and that such curving of the back side opening becomes large as it gets apart from the axis of ordinate.

However, in the same field of endeavor, Simpson discloses a shadow mask **25** for a Braun tube and a dot screen, having a plurality of slots, where curve slots **43** are formed on an outer peripheral side, composed of a back side circular opening **44**, a front side elliptical opening **45**, and side wall sections inclining between the back and front side openings (see Fig. 6 and 12). Furthermore, in the exterior portion **38** of the mask the openings **45** extend radially outwardly from the central portion **36**. Simpson teaches that the techniques of forming substantially elliptical openings in the exterior portion of one surface of the mask and corresponding circular openings on the other surface of the mask may be employed to form polygonal and rectangular openings (see Col. 7, lines 50-57) in order to increase the clearance for electron beams passing through the apertures and to reduce the amount of mask material that would have to be removed to produced the desirable shape on the beam spot, inherently making the mask stronger (see Col. 4, lines 10-11 and lines 21-28).

Therefore, it would have been obvious to anyone of ordinary skill in the art at the time the invention was made to use Simpson's teaching to modify the shadow mask of Ueda, curving the rectangular slots on the peripheral side of the mask, since Simpson teaches that the technique

increases the clearance for electron beams passing through the apertures and reduces the amount of mask material that would have to be removed in order to produce the desirable shape on the beam spot, inherently making the mask stronger.

10. Regarding claim 3, the combination Ueda-Simpson discloses the claimed invention except for the limitation of “the curved slot has an angle of less than 10° ”. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an angle of less than 10° , since optimization of workable ranges is considered within the skill of the art.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueda in view of Simpson as applied to claim 1 above, and further in view of Osamu et al. (JP 01320738). Ueda-Simpson fails to disclose the etch surface on the front side opening side having a depth gradually reduced towards both longitudinal end portions and an etch surface on the back side opening side having a depth gradually increased.

Osamu discloses an etch surface on the front side opening side having a depth gradually reduced towards both longitudinal end portions and an etch surface on the back side opening side having a depth gradually increased (see Figs. 1-3) in order to secure the width of the required electron beams, so the shape of the beam spot becomes a symmetrical preferable one. It would have been obvious to anyone of ordinary skill in the art at the time the invention was made to modify Ueda slot by the teachings of Osamu, since Osamu teaches that with the technique, the

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width of the required electron beams can be secured, so the shape of the beam spot becomes a symmetrical preferable one.

Prior Art of Record

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohtake et al., in U.S. Patent No. 5,280,215, discloses a shadow mask with bulging portions extending from the corners of the slot.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colon whose telephone number is 703-305-5987. The examiner can normally be reached on Monday thru Friday, from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


gc

May 24, 2002


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